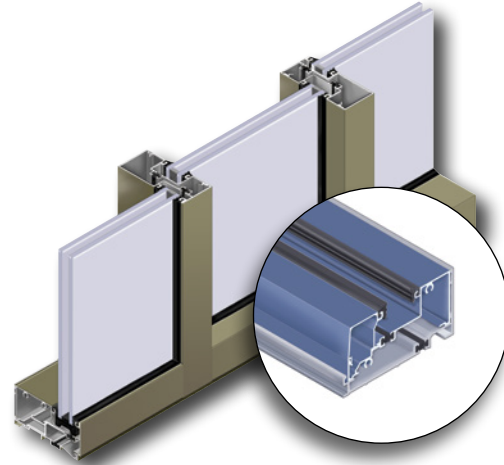


Series 3000 Thermal Multiplane— the versatility of standard storefront systems with improved thermal performance

The Series 3000 Thermal Multiplane extends the versatility of standard storefront systems by offering **improved thermal performance** and multiple glass plane options. The Series 3000 Thermal Multiplane provides more options for head and sill anchorage, **structural silicone glazing** and a front set installation option utilizing continuous head and sill members. Designed for 1" infill, the Series 3000 Thermal Multiplane has available glazing adapters and gasket options for infills ranging from 1/4" to 1-1/8".



First Community Credit Union, St. Louis, MO
Architect: TR,i Architects

Features

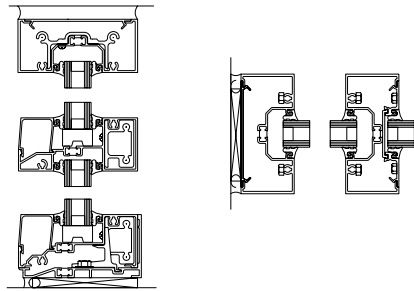
- Overall system dimensions: 2" x 4-1/2"
- Front Set, Center Set, Back Set or Multi Set glazing configurations
- Optional sill receptor requires no additional anchoring of sill member
- Optional thermally broken head anchor clip
- SSG glazing with patented funnel bridge option for Front Set
- Continuous head and sill assembly option for Front Set
- Screw spline and shear block assembly
- Outside and inside glazing options Complete
- 90° and 135° corners
- High sidelite base
- Thermally broken members with polyurethane thermal breaks
- Accommodates projected and casement vents
- Factory painted Kynar 500®/Hylar 5000® finishes, meeting all provisions of AAMA 2605
- Factory anodized finishing



Oldcastle BuildingEnvelope®

Engineering your creativity™

Product Details



Center Set


Performance

- Air Infiltration: <.06 CFM/SQ FT @ 6.24 PSF per ASTM E283
- Static Water: 10 PSF per ASTM E331
- Deflection Load: 40 PSF per ASTM E330
- Structural Load: 60 PSF per ASTM E330
- STC per ASTM E90:
 - 32 with clear glass (Center and Front Set)
 - 37 with laminated glass (Center Set)
 - 38 with laminated glass (Front Set)
- OITC per ASTM E90:
 - 26 with clear glass (Center and Front Set)
 - 30 with laminated glass (Center and Front Set)
- Thermal Performance per AAMA 1503 for Low-E 1" insulating glass:
 - U-factor = 0.33, CRF = 68 Captured (Front Set)
 - U-factor = 0.31, CRF = 72 Captured (Front Set SSG)
 - U-factor = 0.32, CRF = 63 Captured (Center Set)
- NFRC Certified and Thermal Performance Characteristics per AAMA 507



Paint Selection Guide

Standard Fluropon® Colors

				
Bone White 391X035	Colonial White 391A500	Sandstone 393X321	Pueblo Tan 397F153	Beige 393F061
				
Terra Cotta 394F068	Redwood 394F125	Boysenberry 394F172	Sage Brown 397F240	Brown 397A327
				
Medium Blue 396F094	Regal Blue 396F276	Aged Copper 395F502	Interstate Green 395F081	Hartford Green 395F518
				
Military Blue 396F221	Portland Stone 392F213	Fashion Gray 392F217	Charcoal Gray 392F232	Black 378X500

Fluropon® Classic II Colors

				
Copper Penny 399B101	Champagne Gold 399A540	Asti 399C800	Bright Silver 399X440	Pewter 399B026

Colors shown are as accurate as color chip reproduction permits, but may vary from actual color on aluminum.

Oldcastle BuildingEnvelope® proudly offers a wide range of standard colors for your project requirements. Our experience and expertise in applying architectural coatings ensures a quality finish. Oldcastle BuildingEnvelope® standard color selection allows you to personalize your project with color. Premier and Custom colors are offered on a per-job basis. Price and lead-time will vary according to project requirements.

Fluropon® Superior-Performance Coating Systems by Sherwin-Williams

Sherwin-Williams' Fluropon® coatings are premium fluoropolymer coating systems containing 70% Polyvinylidene Fluoride (PVDF) proprietary resins. Fluropon coatings are field-proven, superior-performance exterior finishes that meet or exceed AAMA (American Architectural Manufacturer's Association) 2605 specifications. They provide outstanding resistance to ultraviolet rays, exceptional color retention and resistance to chalking and chemical degradation, making them the finish of choice for high-rise and monumental structures, where proven performance and lasting performance are essential.

Before you choose the finish on your next project, consider the Fluropon® advantages:

- Outstanding resistance to chalk and fade
- Exceptional color consistency
- Solar reflective formulations available
- Long life cycle vital to sustainable design plans

Oldcastle BuildingEnvelope® remains committed to operating in a sustainable manner in the communities where we manufacture as well as the areas in which our products are installed and maintained. All Standard Colors shown are also available in Sherwin-Williams' high-efficiency Flurospar® coatings.

*Premier and custom colors may not be available in high-efficiency Flurospar® due to volume and formulation requirements.

PROUDLY FINISHED WITH
SHERWIN-WILLIAMS®
Coil Coatings

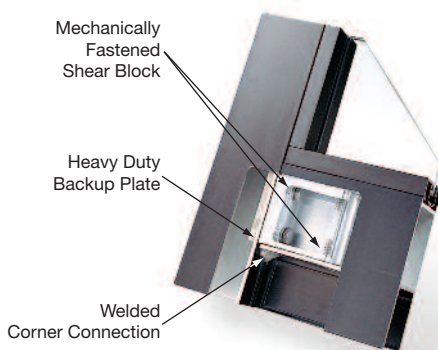
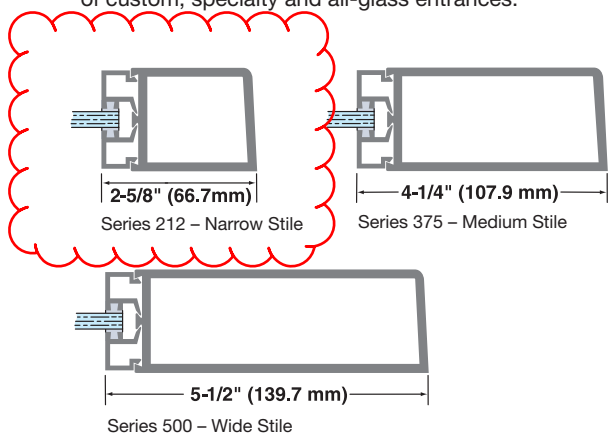
Oldcastle BuildingEnvelope™ — a market leader in Standard Entrances



Oldcastle BuildingEnvelope™ offers standard, narrow, medium and wide stile entrances to **meet a broad range of traffic** requirements. All standard Oldcastle BuildingEnvelope™ entrances (3' wide) are ADA compliant and have built-in features.

Specifications

Oldcastle BuildingEnvelope™ entrances are durable and virtually maintenance free. We also offer a complete line of custom, specialty and all-glass entrances.



AT&T Park, San Francisco, CA
Architect: Populous (formerly HOK Sport)

Features

- Maximum security hook bolt locks
- 1" diameter push/pulls
- Adjustable astragal with dual weathering on pairs of doors
- Mechanically fastened shear blocks and welded corner construction
- Adaptable to virtually all hardware
- 4" to 10" one piece bottom rail options
- Glass stops with bulb gaskets
- 1/4", 3/8", 5/8" and 1" glazing options
- Adaptable to meet local building codes
- Limited lifetime warranty



Hardware

Oldcastle BuildingEnvelope™ employs only the finest entrance door hardware available. For more information, call 866-OLDCASTLE (653-2278) or visit oldcastlebe.com.



Rim Panic Device

Adams-Rite 1850
MS Hookbolt Lock
and FP-1 Face Plate



PH-21
Offset
Panic Pull



LCN®

4040XP Series

Strong, reliable and built for the real world



Overview

The LCN® 4040XP is our most durable and flexible heavy duty surface mounted closer, designed for institutional and other demanding high traffic applications. The 4040XP sets the standard for reliability, longevity and value with a robust design and extraordinary performance testing. LCN goes beyond ANSI and BHMA industry standards with abuse-cycle and temperature testing to mimic what door closers encounter in high-abuse environments. We built the 4040XP from the inside out, combining tougher, bolder construction with proven LCN technology. The result is a closer that's stronger and delivers remarkable value in a variety of applications.

The patented Green Dial on the 4040XP makes spring adjustments fast, easy and foolproof. The all-weather fluid reduces maintenance and ensures consistent performance through every season. High-traffic doors call for heavy-duty closers – closers that won't let you down no matter how many people go through the door. When it comes to heavy-duty closers, no other closer performs like the LCN 4040XP.

Features and benefits

- Cast iron
- Forged steel arm
- Double heat treated steel pinion
- All weather fluid
- Non-handed
- LCN Green Dial spring force indicator
- Peel-n-stick templates
- UL and cUL Listed
- 11/16" Journal diameter pinion
- Full complement bearing
- Tested and certified under ANSI standard A156.4, Grade 1

About Allegion

Allegion (NYSE: ALLE) is a global pioneer in seamless access, with leading brands like CISA®, Interflex®, LCN®, Schlage®, SimonsVoss® and Von Duprin®. Focusing on security around the door and adjacent areas, Allegion secures people and assets with a range of solutions for homes, businesses, schools and institutions. Allegion had \$2.7 billion in revenue in 2018, and sells products in almost 130 countries. For more, visit www.allegion.com.



Pilkington Energy Advantage™ Low-E Glass

Description

Created using a patented color suppression process, Pilkington **Energy Advantage™** Low-E Glass is consistently color neutral and offers true high performance with emissivity 55 percent lower than first generation pyrolytics. By allowing much of the direct solar heat gain through the glazing, **Energy Advantage™** is often referred to as a “passive solar” glass product. **Energy Advantage™** is the Low-E glass of choice for residential and commercial applications that are located in heating dominated areas.

Also, using Pilkington **Energy Advantage™** Low-E Glass as the inboard lite in an I.G. unit creates a superior Pilkington **Sun Management™** Glass System that optimizes the solar control and energy efficiency of any glass – from clear float to high-performance tints, to Pilkington **Eclipse Advantage™** Reflective Low-E Glass.

Note:

Other Pilkington Low-E products such as Pilkington **Eclipse Advantage™** and **Solar-E™** provide excellent thermal control. Full product descriptions for both can be found in the solar control section.

What is Low Emissivity?

Emissivity measures how strongly a product emits or radiates absorbed heat. The lower the number, the more efficiently the glass reduces conductive heat gain or heat loss, which means a lower U-Factor and better insulation. For comparison, uncoated glass has an emissivity of 0.84 and Pilkington **Energy Advantage™** is 0.15, which means only 15 percent of heat absorbed is re-emitted from the coated side. This feature is useful as it reflects energy back towards where it came from. If a solar control glass is used, then adding a lite of Low-E on the room side acts as a barrier to the absorbed heat in the glass passing to the inside of the building. For buildings that require passive heat gains, a low emissivity coating with clear glass allows direct solar radiation to pass through the glass and then traps it inside. So Pilkington **Energy Advantage™** reduces energy use.

Features and Benefits

- Color Neutral
- Durable Pyrolytic Surface
- Energy Efficient
- Easily Fabricated
- Improved Design Flexibility
- Excellent Availability
- Reduced Lead Times

Applications

- Commercial and Residential Buildings Requiring Solar and Thermal Control
- Low, Mid and Hi-Rise
- Medical/Hospital
- Educational/Schools
- Office
- Retail
- Residential



Tempered Glass Product Data Sheet

Annealed float glass can be cut to a desired finished size and tempered to provide a glass product with greater resistance to thermal, mechanical or impact loads or to break in a manner that allows its use where safety glass is mandated by federal law or building code. Although tempered glass has increased resistance to thermal loads, it is not a fire-rated glazing product.

Syracuse Glass Company's TUFFVUE Tempered glass is available in 1/8" – 3/4" thickness in a size range from a minimum of 4"x10" to a maximum of 84" x 144". Clear, Tinted, Reflective, Low E, and most Rolled Pattern Glass can be tempered. Glass products with extremely uneven surfaces can not be tempered.

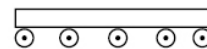
Tempered glass is used where high resistance to mechanical loads calls for maximum glass strength achievable for a given glass thickness, and where a safety glazing product is mandated by law, by building code or by a desire for maximum safety in the event of human impact.

While tempered glass is very strong, it can be broken. And when it does break, it disintegrates into tiny pieces. Therefore it should be used with caution where falling material would be a concern, like windows in a multi-story building over a court yard or plaza, or where security is of paramount concern, like a prison or jewelry store display window, or in a furniture application where glass disintegration would risk collateral damage, like a shelf or table holding precious objects. Tempering also enables heat absorbing glass products to withstand high thermal loads and stresses, but the industry recommends the use of heat strengthened glass where thermal stress is predicted. The tempering process adds distortion and changes the glass surface, factors that should be considered if appearance of reflected images is critical.

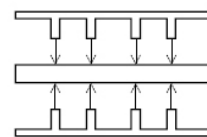
Tempering Process

Syracuse Glass Company fabricates tempered glass with a UNIGLASS state-of-the-art electrically heated horizontal furnace with the latest technological innovation in tempering – convection. The glass is conveyed into a heating chamber where it oscillates on ceramic rollers until it reaches a temperature of approximately 1200 degrees Fahrenheit.

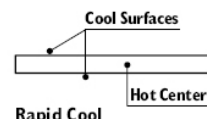
The glass exits the furnace into a quench chamber where it is rapidly cooled by air driven through a series of nozzles by two six hundred horsepower motors. The air is directed to both surfaces of the piece of glass uniformly - top and bottom. The quench process locks the top and bottom surfaces and edges in a state of high compression around a central core in compensating tension. The compression zone is about 20 percent of the glass thickness from each surface, surrounding a center core tension zone of about 60 percent of the glass thickness.



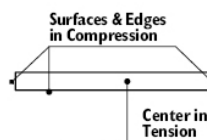
Furnace



Air Quench



Rapid Cool



Final Condition

Tempered Glass Product Data Sheet

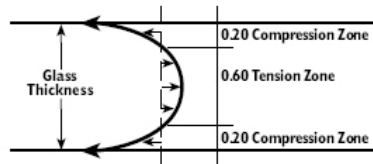
Properties

- Tempered glass has about four times the strength to resist impact, or mechanical and thermal loads compared to annealed glass of equal thickness.
- The color, clarity, chemical composition and light transmission characteristics of glass remain unchanged after tempering.
- Tempering does not reduce glass deflection under load. Glass deflection can be reduced by using glass of greater thickness.
- Tempered glass breaks into small pieces less likely to cause injury than annealed or heat strengthened glass.
- Tempered glass can not be cut or drilled, sandblasted or etched, or edge polished or ground. Any fabrication or field alteration will weaken or break tempered glass.
- Tempered glass is subject to rare "spontaneous breakage" caused by one or a combination of these causes: surface or edge damage, deep scratches or gouges, severe weld spatter, missile or windborne debris impact, glass to metal contact, wind/thermal loading or rare inclusions or impurities in the float glass that weaken the compression layer of the glass. Breakage may occur long after the damaging event, as a result of normal thermal or wind cycling, but seemingly for no apparent cause.
- **When** tempered glass breaks, the resulting small pieces can vacate the framing system under a lateral load. Other fabricated glass options like laminated glass or heat strengthened glass are less likely to leave the framing system in the case of breakage.
- **When** viewing tempered glass in certain conditions, a pattern of iridescent spots or darkish shadows may become visible. This is the strain pattern created by the quench process. Sharp viewing angles, polarized light, thick glass, and glass coatings increase the visibility of the strain pattern.
- The original flatness of glass is slightly modified by the tempering process, causing reflected images to be more distorted than annealed glass. Warp, bow, and roller distortion are inherent characteristics of tempered glass. Syracuse Glass Company produces product among the best in the industry, but distortion of reflected images can not be entirely eliminated, especially when viewed at high incidence angles, with even the best equipment and craftsmanship. As distortion is not easily quantifiable, full scale mock-up samples are recommended for critical viewing areas.
- **As** a result of hot glass contact with ceramic rollers, some glass surface changes will occur. Minute glass particles (fines) from the glass cutting and edging process, and airborne dust may adhere to one or both glass surfaces. Also, the physical contact of the soft glass surface with the rollers may result in a marking of the glass surface. These surface conditions are typically not visible to the eye under normal viewing conditions. Tempered glass surfaces should not be cleaned with razor blades or metal scrapers.
- **Sizes**, locations, and quantities of holes and notches in tempered glass must be governed by ASTM C1048 guidelines.
- Tempered glass must have seamed or polished edges.
- Tempered glass is supplied with a permanent identifying mark in one corner identifying the manufacturer and the applicable safety glazing standards unless ordered "no logo".

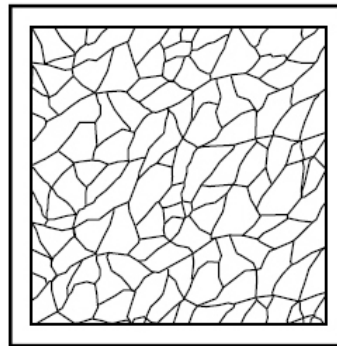
Tempered Glass Product Data Sheet

Stress

Tempered glass gains its added strength from these compressed surfaces. However, if the surface is penetrated by a scratch or an impact, the glass will break into a number of small particles.



Final Stress Distribution. The sum of the forces in compression equals the force in tension.



Typical Breakage Pattern

Certifications:

TUFFVUE Tempered Glass Products manufactured by Syracuse Glass Company meet the requirements of :

- **ASTM C1036** Standard Specification for Flat Glass
- **ASTM C1048** Standard Specification for Heat Treated Flat Glass
- **ANSI Z97.1** American National Standard for Safety Glazing Materials Used in Buildings
- **16 CFR 1201** Category II Consumer Products Safety Commission Safety Standard for Architectural Glazing Materials

Syracuse Glass Company is a licensee of the Safety Glazing Certification Council (SGCC), a non-profit corporation that provides third-party certification of safety glazing materials through unannounced in-plant inspections and laboratory testing.



DOWSIL™ Contractors Weatherproofing Sealant

Medium-modulus silicone joint sealant

Features & Benefits

- Primerless on most common nonporous building substrates
- Balanced adhesive strength, medium modulus, and high recovery
- Easily gunnable in all weather conditions

Composition

- High-performance, medium modulus, one-part, neutral-cure silicone sealant

Applications

- Sealing dynamically moving joints such as expansion and control joints, concrete panel joints, tilt-up panel joints, curtainwall joints, perimeter caulking (windows, doors, panels, EIFS, bedding of mullions, panels, and frames, etc.)

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Test ¹	Property	Unit	Result
As Supplied			
	Colors		20 standard, 19 made-to-order special, and custom colors
	Application Temperature, Substrate	°C °F	-29 to 49 -20 to 120
	Tack-Free Time, 50% RH	hours	3–6
	Curing Time, 3/8" (9 mm) Depth, 50% RH at 25°C (77°F)	days	7–14
C 639	Weep and Sag		Passes
	VOC Content	g/L	35
As Cured			
C 661	Durometer Hardness, Shore A	points	25 ±5
D 412	Ultimate Tensile Strength	psi MPa	180 1.24
D 412	Ultimate Elongation	%	550

1. ASTM: American Society for Testing and Materials.

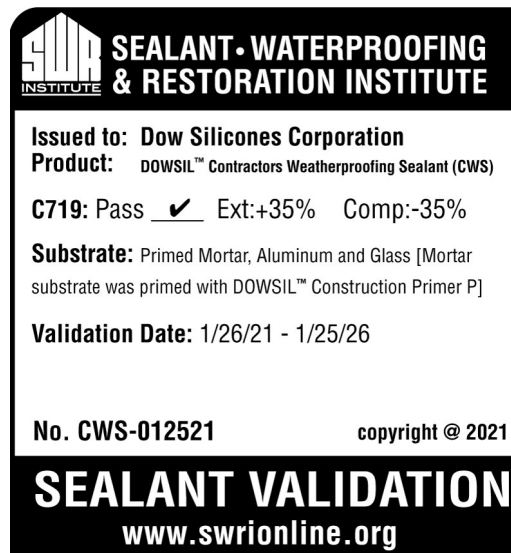
Typical Properties (Cont.)

Test	Property	Unit	Result
C 794	Peel Strength	lbs./in	20 to 28
		N/m	109 to 152
C 719	Joint Movement Capabilities, Extension/Compression	%	±40
C 510	Staining		Passes
C 792	Weight Loss, Cracking, and Chalking after Heat Aging		Passes
	Service Temperature, Cured Bead	°C	-40 to 121
		°F	-40 to 250

Description

DOWSIL™ Contractors Weatherproofing Sealant is primerless on most common nonporous building substrates. This unique weather-resistant formulation possesses a balanced adhesive strength, medium modulus, and high recovery, making it ideal to withstand adverse conditions in common installations including moisture, movement, sheer, and deflection. It is easily gunnable in all weather conditions from -29 to 49°C (-20 to 120°F). Because it requires no mixing and a smaller joint ratio, it is an economical, high-performance alternative to other sealant options with a ±40 percent movement capability.

DOWSIL™ Contractors Weatherproofing Sealant is available in 20 standard stocked colors (white, limestone, gray, window bronze, sandstone, aluminum, antique white, charcoal, black, bronze, precast white, off white, ivory, buff, mountain fog, anodized aluminum, sandalwood, geographic beige, redwood tan, light bronze) and 19 made-to-order special colors. Custom colors are also available.



Approvals/ Specifications

DOWSIL™ Contractors Weatherproofing Sealant meets or exceeds the requirements of:

- ASTM C 920, Type S, Grade NS, Class 35, Use NT, M, A, and O (granite)

How to Use

Refer to the Dow Americas Technical Manual, Form No. 62-1112, for detailed information on joint design, preparatory work, priming, masking, and application techniques.

Joint Design

While most urethanes suggest a depth of 1/2" to 5/8" (13 to 16 mm) in wide joints, the superior weathering of this silicone allows a 3/8" (9 mm) depth in wide joints. DOWSIL™ Contractors Weatherproofing Sealant can be used in the following joint configuration:

- A. Minimum width of joint should be four times the anticipated movement, but not less than 1/4" (6 mm) wide.
- B. Joint depth to be 1/4" (6 mm) for joints 1/4" to 1/2" (6 to 13 mm) in width.
- C. Maximum joint depth not to exceed 3/8" (9 mm).
- D. Maximum joint size approximately 1–1/4" (32 mm) width x 3/8" (9 mm) depth in a single application.
- E. Consult your local Dow representative for specific design requirements.

Surface Preparation

The joint interface must be clean, dry and free from oils, loose mortar, laitance, form release agents, waterproofing, damp proofing, and other contaminants. A thorough wire brushing, grinding, sandblasting, or solvent cleaning may be required to expose clean, sound, virgin surface.

Priming

Primer should be applied before installing the backer rod. Applying a bead of silicone sealant to the substrate material to test adhesion prior to general use is always recommended.

DOWSIL™ Contractors Weatherproofing Sealant is primer less on most common nonporous building substrates. Consult Dow for priming recommendations on other materials.

In all cases, a sample should be tested and/or test joints should be installed on the project.

Masking

Areas adjacent to joints should be masked to ensure neat sealant lines and to avoid contact with polished granites, metal, or glass. Do not allow masking tape to touch clean surfaces on which the sealant is to adhere. Masking should be removed immediately after tooling.

Application

Install backer material or joint filler, setting blocks, spacer shims, and tapes as specified. Apply sealant in a continuous operation, using a positive pressure adequate to properly fill and seal the joint.

Tooling

Tooling should be completed in one continuous stroke immediately after sealant application and before a skin forms. Tool or strike the sealant with light pressure to spread the material against the backer material and the joint surfaces. A tool with a concave profile is recommended to keep the sealant within the joint. Do not use liquid tooling aids such as water, soap, or solvents.

How to Use (Cont.)**Tooling (Cont.)**

Tool the sealant applied at sills so that precipitation and cleaning solutions will not pool.

Cleaning

Immediately remove all excess sealant and smears adjacent to the joint with xylene or toluene as work progresses.¹

Typical Cure

Cure rate at 25°C (77°F) and 50% RH:

- A. Tack-free time: 3–6 hours.
- B. Through cure (3/8" [9 mm] depth): 7–14 days.

Maintenance

Generally, no maintenance is required. If the sealant becomes damaged, replace the damaged portion. DOWSIL™ Contractors Weatherproofing Sealant will adhere to most cured silicone sealant with only a preparatory solvent wipe to remove accumulated dirt. Dirty sealant may be cleaned with a solvent wipe or soap and water.

¹Follow solvent manufacturer's recommended safe handling instructions and applicable federal, state, and local regulations.

**Handling
Precautions**

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

**Usable Life and
Storage**

DOWSIL™ Contractors Weatherproofing Sealant has a shelf life of 18 months from date of manufacture. Refer to product packaging for "Use By" date.

**Packaging
Information**

DOWSIL™ Contractors Weatherproofing Sealant is available in 10.3 fl oz (305 mL) cartridges (12 per case), 20 fl oz (591 mL) sausage packs (16 per case) and 2 gal (7.5 L) pails.

Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

DOWSIL™ Contractors Weatherproofing Sealant is not recommended for:

- Silicone structural glazing
- Application in confined areas without proper ventilation
- Joints under constant water submersion

**Shipping
Limitations**

None.

Health and Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, dow.com or consult your local Dow representative.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

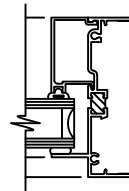
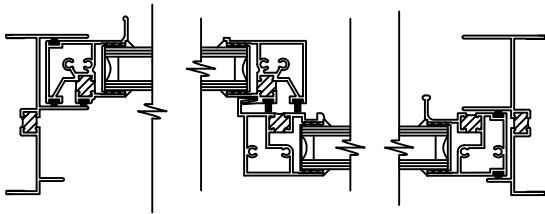
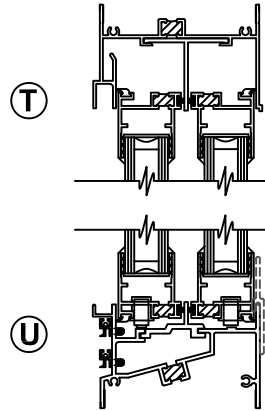
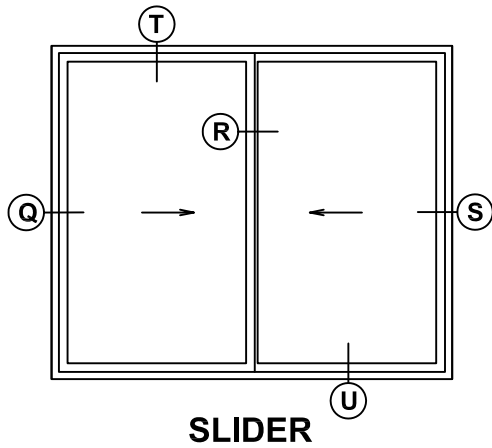
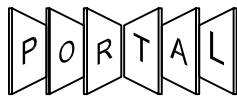
Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

dow.com

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